White Knight

ECO 83A

*The **LOW CARBON** Dryer*

INSTALLATION AND SERVICE INSTRUCTIONS

Keep this booklet for future reference.

The dryer must be fitted by a competent person. In the U.K. Registered Installers undertake to work to safe and satisfactory standards.

The dryer must be installed in accordance with the Gas Safety (Installation and Use) Regulations 1998.

Guidance may be obtained from the relevant parts of B.S. 7624: B.S. 5440 parts 1 and 2, B.S. 6891: current editions, I.E.E. Wiring Regulations, and relevant Building Regulations.

Failure to install the appliance correctly could invalidate the warranty liability claims and could lead to prosecution.

FOR USE IN THE UNITED KINGDOM AND IRELAND WITH NATURAL GAS ONLY: I_{2H}, GAS SUPPLY PRESSURE : 20 mbar.

THE INSTALLER MUST LEAVE THIS BOOKLET WITH THE CUSTOMER

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WARNING
THIS APPLIANCE SHALL BE INSTALLED IN ACCORDANCE WITH THE LOCAL REGULATIONS IN FORCE AND ONLY IN A WELL VENTILATED SPACE.READ THE INSTRUCTIONS BEFORE USING OR INSTALLING THIS APPLIANCE.

THIS APPLIANCE CONFORMS TO THE FOLLOWING EEC DIRECTIVES.
LOW VOLTAGE DIRECTIVE LVD 2006/95/EC:EN60 335-1, EN60 335-2.11.
GAS APPLIANCE DIRECTIVE (GAS) 90/396/EEC:BS 5258:PART 17:1992.
EN 1458-1, 2000 ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2004/108/EC:EN55014, EN 61000 - 3 - 2, EN 61000 - 3 - 3, EN 50366

TECHNICAL DATA

GENERAL

Front loading resistance sensing tumble dryer with gas heating. Reverse action drum tumble. Electronic control. 2-temperature exhaust thermostat control. Induced air flow enters dryer through front grille, some passes through the gas burner into the rear ducting and some into the cooling passages, this mixed air enters the drum through the rear perforations, passes through the clothes, lint filter, and the fan and is discharged through the vent at the rear.

CONNECTIONS

Gas pressure: Rp $^1/_2$ ($^1/_2$" B.S.P. parallel internal thread).
Nominally 20mbar

Electric: 230V. 50 Hz, earthed supply, 13A fuse. (wall socket must have efficient earth connection and correct polarity)

DIMENSIONS

Height 85 cms. (33$^1/_2$")
Width 59.6 cms. (23$^1/_4$")
Depth 57 cms. (22$^1/_2$")
Depth when rear vent hose assembled 60cms. (23$^5/_8$")

WEIGHT

With packing	37 kg
Without packing	36 kg

SUPPORT

Machine rests on 2 rear positioned rollers and 2 non adjustable feet.

AIR-FLOW

Approximately 120 cubic metres per hour with capacity clothes load.

IDENTITY

Manufacture date, and serial number are displayed on a plate revealed when machine door is open.
The first 4 numerals identify year and week of manufacture. The last 6 numerals identify the machine. ALL INFORMATION FROM THIS PLATE SHOULD BE QUOTED IN ANY SERVICE COMMUNICATION.

COMPONENTS

DRIVE MOTOR

Permanent split capacitor (8µF) 4 pole—Approx. $^1/_8$ HP
Overload protection approx. 130°C

BURNER

Pressed steel with slotted flame perforations.
Heat input: 3.0kW (10235 Btu/hr). Injector 1.32 mm dia.

GAS CONTROL

Type: Pactrol full sequence flame control, P16A GTD(CE) 414601. Ignition electrode gap to burner 3 to 4mm Flame failure electrode (4213 078 52641). Height from heater base to centre of electrode 27.0±0.5mm.

INLET THERMOSTAT

(Brown wires identify)
Bi-metal contacts normally closed.
Contacts open if airflow restricted.
Contacts open 130˚C ± 3˚C
Contacts reset 100˚C ± 5˚C

INLET TEMPERATURE LIMITER

(White wires identify)
Bi-metal contacts normally closed.
Contacts open if INLET THERMOSTAT fails.
Contacts open 143˚C ± 4˚C
Contacts reset 95˚C ± 10˚C

EXHAUST THERMOSTATS

Bi-metal contacts normally closed.

Normal Fabrics: 60˚C (green spot identification)	Contacts open 60˚C ± 3˚C Contacts reset 49˚C ± 4˚C
Delicate Fabrics: 50˚C (red spot identification)	Contacts open 50˚C ± 3˚C Contacts reset 39˚C ± 4˚C

DRUM

Volume	105 litres
Speed	approx. 50/59 r.p.m.
Capacity	7 kg dry cotton
Rotation	clockwise 6 mins., anticlockwise 10 secs

TRANSMISSION

Poly-vee belt driven by vee-grooved motor pulley to outer circumference of drum.

ELECTRONIC CONTROL

8 selectable programmes giving choice of dryness level and timed programmes. When drying is complete, intermittent tumbling (anticrease) follows until the machine is unloaded.

HEATER SWITCH

Single pole, ON/OFF, PUSH-PUSH
START SWITCH-momentary push switch.

R.F.I. FILTER

0.1µF + 2x2400pF + 2x5mH + 2M2

ACCESSORIES

	VENT HOSE ASSEMBLY	0312 001 01001
	WALL/WINDOW VENT KIT	0312 005 01001
	STACKING KIT	0312 003 01001
	RESTRAINING KIT	0312 006 01001

INSTALLATION

1 INSTALLATION

The dryer is designed for installation using a flexible gas connection with tubing in accordance with B.S. 669.

Ensure that the supply gas sizing is adequate.

When installing, position the appliance so that the plug is accessible.

An electric supply cord with moulded-on 13 Amp. plug is fitted at the back of the dryer. The length is 1.5 m. (5ft.).

If there are any other appliances that are relatively high rated (eg a central heating boiler) fed from the same gas supply branch. It is advisable to perform the verification of inlet pressure with both appliances in operation.

Prior to installation, check that the local distribution conditions, nature of gas and pressure and adjustment of the dryer are compatible.

2 AIR SUPPLY

The tumble dryer shall be installed in a room or internal space having an openable window, or equivalent. The customer must be advised that this must be kept open during use.

Purpose provided ventilation of 100cm^2 shall also be provided where the room volume is less than 3.7m^3/kw of appliance rated heat input.

Additional guidance on the provision of air supply may be obtained from BS5440 parts 1 and 2 and BS 7624:2004

If the dryer is to be installed in a room or internal space that already contains one or more fuel burning appliances, the ventilation requirements above, together with any additional requirements of BS5440-2:2000, 5,5 shall be applied.

3 POSITION

The dryer must not be installed in a bedroom, bathroom or shower room.

Great care is required in the location of the dryer in premises where concentrations of flammable vapours may accumulate, e.g. commercial garages and associated workshops.

The dryer can be placed against a wall, other appliances, kitchen furniture and similar surfaces.

4 VENTING

The dryer must be fitted with an exhaust vent hose and the end either hung out of a window or fitted to a wall/ window vent connection.

When positioning the hose, care must be taken to avoid loops into which steam could condense.

Note; Do not obstruct or add a mesh to the vent hose outlet during use and ensure that it cannot be blocked or bent sharply which obstruct the air flow.

It is recommended that the interior of the hose be periodically inspected and cleaned if necessary.

PERMANENT VENTING

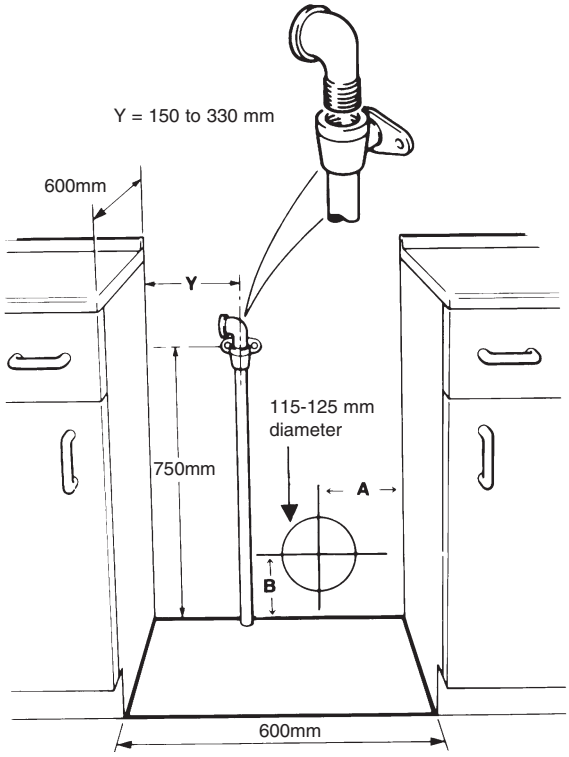
Accessory wall/window vent kit CL005 is available:

See illustration for necessary hole through wall. Dim **A** = 200mm and Dim **B** = 100mm for direct alignment.

Note Dim **B** may be increased to 200mm to facilitate easier drilling if required.

See Gas Safety Regulations for position of vent on outside wall.

5 POSITION OF DRYER AND CONNECTIONS



The illustration shows the minimum space required by the dryer and the position of the gas wall connector. It is not acceptable to use a forward facing mounting plate because of the space limitation. The sideways facing assembly must be used and this should be fitted so that the flexible hose hangs down from the bayonet connector.

A 13 Amp socket must be provided within a distance of 1.4 m (55 in.) of the cable entry into the dryer. The socket must have an efficient earth connection.

If the dryer is to stand on a surface above the floor or on top of a washing machine (using the Stacking Kit) then the 750 mm dimension is measured above the supporting surface.

If the dryer is installed under a worktop there must be a minimum gap of 15 mm between the top of the dryer and the underside of the worktop to allow for ventilation.

If it is intended to move the dryer regularly for use then the Restraining Kit must be fitted to prevent possible damage to the gas connection.

We also recommend the fitting of a restraining kit to any dryer which is stacked.

If using accessories:

Wall/Window Vent Kit

Stacking Kit

Restraining Kit

See separate fitting instructions included with each Kit.

6. OPERATIONAL CHECK

6.1 Remove the pressure test point screw from the gas tee connection at the back of the dryer and connect a gas pressure gauge.

6.2 Check that the selector switch is set to 'Extra dry', and that the heat switch is set to 'high'.

Remove anything from inside the drum, check that the lint filter is fitted, shut the dryer door.

6.3 Turn on the gas, push the electric plug into the socket switch on the electricity supply, and push the start button.

6.4 Check for ignition. If the gas fails to remain lit then repeatedly (open and close the door) and press start switch. Run the machine for periods of at least 30 seconds until the air is removed from the system and burning is continuous.
Note that Gas is not lit when the drum is turning anti-clockwise.

6.5 With the gas burning ensure that the pressure is as detailed in the Technical Data. Turn off and replace the pressure test point screw. Check for soundness.

6.6 Switch on again and re-start so that the gas is burning.Disconnect the flexible gas hose and check that the solenoids can be heard to close. After 30 seconds turn on the gas and check that there is no re-ignition. Switch the machine off and on again and check for re-ignition.

6.7 Check that the operation of the machine does not cause spillage of products of combustion from any open flued gas appliance in the same room, or from appliances in adjoining rooms, e.g. a gas fire or central heating boiler.

6.8 In the event of an electrical fault after installation of the appliance, preliminary electrical system checks must be carried out (i.e. earth continuity, polarity and resistance to earth).

6.9 **IMPORTANT INFORMATION RE-FUNCTIONING OF THE FULL SEQUENCE FLAME CONTROL BOX.**
THE FULL SEQUENCE FLAME CONTROL BOX ON THIS APPLIANCE REQUIRES A 6 SECOND RE-SET PERIOD FOLLOWING EACH INTERRUPTION OF INPUT VOLTAGE.

6 SECONDS DELAY IS REQUIRED BETWEEN EACH ATTEMPT TO RESTART THE APPLIANCE FOLLOWING SWITCHING IT OFF, OR AFTER OPENING THE DOOR.

7 AIRFLOW

It is most important that airflow to the plinth is not restricted.

8 MAINTENANCE

This appliance does not require an annual service unless it is required as part of a landlord's gas safety certificate.

If you do have any maintenance activity carried out, it should be carried out by a competent person (i.e. registered).

9 STACKING

Instructions for stacking, if required, are supplied with the stacking kit.

SERVICE INSTRUCTIONS

PROGRAMME

The electronic control measures dryness by the electrical resistance method and operates relays to: a) energise the drive motor, in foward and reverse rotation and b) energise the full sequence flame controller.

The electronic controller determines when the selected dryness level is reached, then turns off the heat source and continues to rotate the drum for 12 minutes "cool down", intermittent tumbling follows this until the machine is unloaded - "anticrease" is indicated by a neon.

The full sequence flame controller opens the tandem solenoid gas valves after a delay time of about 8 seconds and operates the pulsing spark ignition. If the flame is not detected by the flame failure electrode within 10 seconds then the valves are closed. The system must then be re-set by switching the machine off and re-starting.

The heat selector switch provides options for either 60°C, or 50°C, exhaust thermostat control. This results in the burner cycling on and off giving longer drying times. With low heat drying times vary depending on the weight and size of the articles, type of fabric, dampness etc. These thermostats turn off the heating towards the end of the chosen cycle and so avoid waste of energy. The lower temperature thermostat prevents delicate fabrics from getting too hot with possible risk of damage.

An inlet thermostat is fitted in the ducting at the back of the dryer. This will operate under restricted airflow conditions. It may operate under certain other conditions, for example, an overloaded drum or blocked lint filter. This thermostat switches off the flame controller. This will result in the burner cycling on and off giving longer than anticipated drying times. Drying times vary depending on the weight and size of the articles, type of fabric, dampness etc.

Should the thermostat fail there is an inlet cut-out connected in circuit with the gas valves. After operation, the flame controller must be re-set by switching OFF/ON the mains supply to restore heating but a service call may be required to correct the initial fault.

The conditions of failure of the air flow, blow-back, or of gas interruption are detected by the flame failure electrode and the system is shut-down.

Both drum rotation and heater control are switched off when the door is opened and switched on when the door is reclosed, and the Start button pressed.

For programme times see chart on dryer control panel.

Note: Do not allow fluff to accumulate around the dryer.

RECOMMENDATIONS FOR DISMANTLING

Note: Re-assembly should be done in reverse sequence to these instructions.

TOP ACCESS

Terminal Block (28), Control Unit (10), Timer (211), Heat Switch (235), Neon (213), Micro-Switch Assembly (248), Control Panel (353).

Withdraw 3 screws from the back flange of the Table Top Assy. (386) and lift and move it rearwards for removal.

This gives access to the 2-screws securing the Control Unit Bracket (11) to the top flange of the Cabinet.

Pull off the Timer Knob (352) by means of a loop of thin insulating wire inserted behind it, to expose the 2-screws securing the Timer (211) to the Control Panel (353).

To remove the Neon (213) disconnect the faston connectors and push the neon out of the control panel.

To remove the Control Panel (353), disconnect the faston connectors from the Timer, Neon, and Heat Switch. Withdraw 3-screws securing the Control Panel lugs to the Cabinet top rail. Tilt the Control Panel so that the bottom lugs can be freed from the top flange of the Front Panel (376).

To remove the door Micro-Switch Assy. (248), withdraw the 3-screws securing the Control Panel lugs to the cabinet top rail and free the Control Panel Assy from the top flange of the Front Panel. Open the door and withdraw 2 screws securing the Micro-switch Assy, to the Front Panel, unclip the wires from the top flange of the Front Panel, lift out the Assy, and disconnect the faston connectors.

REAR ACCESS LOWER

Exhaust Thermostats (229, 250), Motor Assembly (101), Fan Assembly (446), Capacitor (112).

Withdraw the 6 screws securing the Cover Plate (19) to the Back Panel (24) and remove it. Pull out the Exhaust Tube (30).

This gives access to the Exhaust Thermostats (229, 250), which are each secured to the Banjo (440) by a screw.

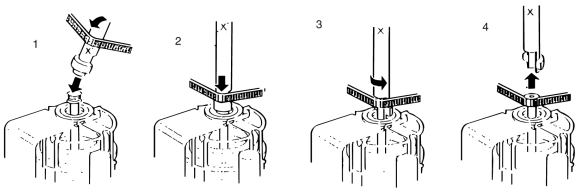
Note: The 50˚C thermostat is identified by a red spot on the body.

REAR ACCESS LOWER (continued)

To remove the Motor (101) the belt (125), must first be removed from the Motor. Disconnect the Motor leads. Withdraw the black headed pin (537). Exert an anti-clockwise force to disconnect the bayonet fitting between

the Fan Access Cover (447) and the back of the Banjo Assy (440). From underneath the dryer withdraw the 4-screws (396) securing the Motor Bracket (432) to the cabinet base. Lift out the Motor and Fan Assy.

Special tool (7813 002 61111) is recommended when installing a new belt which needs to be levered and stretched onto the motor spindle (see illustration).

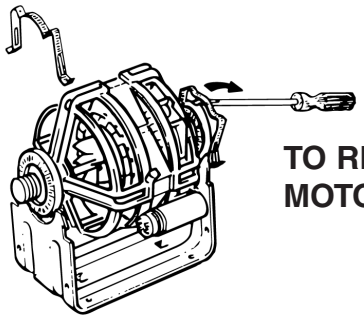


A capacitor (112) is mounted to the motor assembly Disconnect the wires to the capacitor before removing the capacitor or the motor capacitor assembly.

The fan (446) is secured to the Motor Shaft by the Spring Clip (448) and the finger on the Fan Boss must be lifted before the fan can be withdrawn from the Motor Shaft.

It is important that rigid support is provided to the motor shaft when the fan is being refitted. This is to avoid disturbance of the motor bearings from their location.

On reassembly of the fan access cover (447) it is important to hold the protruding finger grip at a “2 o-clock” position to find location. Push the cover fully on to the fan chamber prior to rotating it clockwise and engaging tightly in al 3 locations. Re-insert the black headed pin (537).



TO RELAX MOTOR CLIPS

HEATER ASSEMBLY REMOVAL

Heater Assy. (32), Solenoid Coil (45 or 45A), Flame failure Electrode (33), Ignition Electrode (39).

Withdraw the 2-screws securing the Plinth (199) to the Cabinet, unhook the bottom edge fixing, and remove it.

Separate the 4-way Housing (31) to release the wiring from the Heater Assy. to the Cabinet.

Lay the dryer flat on its front, supported to take the weight from the door and controls.

Withdraw the 6-screws securing the Cover Piate (19) to the Back Panel (24) and remove it. Pull out the Exhaust Tube (3o).

Withdraw the 4-screws securing the Hot Air Elbow Assy. (20) to the Back Panel (24) and remove it.

Disconnect the External Feed Pipe (15) from the Tee Piece (27).

Pull the connectors off the Flame failure Electrode (33) and the ignition Electrode (39).

Withdraw the 3-screws and shakeproof vvashers (13) securing the Flame Tube Assy. (34) to the Cabinet base.

Note: On re-assembly the shakeproof washers must be replaced to ensure a good earth connection.

Lift out the Heater Assy.

To remove either solenoid coil (45 or 45A) disconnect the electrical connectors, unscrew the nut (44).

To remove the sensing electrode (33), withdraw the screw (41) lockwasher (482) and nut (411) securing it to the Flame Tube Assy. (34). Note on re-assembly the lockwasher (482) must be replaced to ensure a good earth connection.

To remove the Ignition Electrode (39), withdraw the screw securing it to the top of the Heater Tube Assy. (34).

If there is a fault in the valves, burner or other parts of the gas line, then the Heater Assy. (32) must be replaced.

REAR ACCESS UPPER
Rear Seal Assy. (14), Drive Belt (125), Drum (266), Drum Shaft and Bearing (270).

Remove the table top assembly (386) and disconnect the Faston terminals from the 2-way Terminal Block (28).

Lay the dryer flat on its front supported to take the weight from the door and controls.

Withdraw the 6-screws securing the Cover plate (19) and remove it. Pull out the Exhaust Tube (30).

Withdraw the 4-screws securing the Hot Air Elbow (20) and remove it.

Disconnect the External Feed Pipe (15) from the T-piece (27).

Withdraw the 16-screws securing the Rear Banjo (18) and lift it off.

Disconnect the Faston connectors from the Inlet Thermostat (230) and the TOC (38) from the 4-way Terminal Block (142).

Withdraw the 3-screws (412) securing the Drum Shaft and Bearing Assy. (270) to the Back Panel (24).
Withdraw the 8-screws securing the Back Panel (24) to the Cabinet (196). Disengage the T-piece Grommet from the slot in the Back Panel and lift off.

The Rear Seal (14) can be prised off the inside of the Back Panel (24) with a screw-driver, but care should be taken not to damage the inner sheet metal flange. Remove excess adhesive before fitting the replacement Rear Sear (14) using the impact adhesive (Scotchgrip 1099).

To remove the Drive Belt (125) it should be disconnected from the Motor Pulley and lifted off the Drum.

Note: When re-placed the drive belt should be located within the lines marked on the Drum circumference.

After removing the Drive Belt the Drum Assy. (266) can be lifted out.

For dismantling the Drum Rear Bearing (270) access to the Earth Finger (421) securing screw (420) is through a hole in the back of the Drum. After removal of the Earth Finger the screw (422) securing the Drum Shaft Assy. (426) is through a hole in the centre of the back of the Drum.

Note: It is important that the recess in the head of the shaft centre screw (422) is filled with electrically conductive grease, e.g. Electrolube 2G.

When dismantling the Drum Rear Bearing care should be taken not to allow parts to fall into the space between the back of the drum and the drum rear seal plate.

FRONT ACCESS

Front Panel (376), Banjo Assembly (440), Front Seal (442), Front Bearings (441 and 445).

If the Banjo (440) is to be removed then the exhaust thermostats should first be disconnected or removed as described in REAR ACCESS LOWER.

Remove the Top Cover (386), the 3-screws securing the Control Panel lugs to the Cabinet top rail, and the screws securing the Micro-Switch Assy. - See TOP ACCESS.

Lay the dryer on its back.

Withdraw the 2-screws securing the plinth (199) to the Cabinet, unhook the plinth fixings and remove it.

Withdraw the 2-screws (357) securing the Latch Guide (370) to the Front Panel (376) and remove it.

Withdraw the 2-screws securing the Hinge Assembly (359) to the Front Panel. Remove the Door and Hinge Assy.

Withdraw 3-screws securing the Front panel to the Banjo Assy. (440) - 2 in the Front Panel bottom flange and 1 countersunk screw adjacent to the door opening.

Withdraw the 4-screws securing the Front Panel to the Cabinet. Lift off the Front Panel.

Disengage the Banjo (440) from the front of the Drum and disengage the location lug with the Cabinet base. Remove the Banjo Assy.

The Front Bearings Short (441) and long (445) can be unclipped from the Banjo flange to release the Front Seal (442). Care is needed to avoid breaking these bearings.

INLET THERMOSTAT & THERMAL OVERLOAD CUT-OUT (TOC) REMOVAL

Lay the dryer flat on its front, supported to take the weight from the door and controls.

Withdraw the 6-screws securing the Cover Plate (19) to the Back Panel (24) and remove it. Pull out the Exhaust Tube (30). Disconnect the Faston connectors from the 4-way Terminal Block (142) as necessary (see wiring Diagram for colour code). Cut off the 2-Cable Ties (387).
Note: on reassembly these must be replaced by new components to secure thermostat wiring away from contact with the Drum.

Withdraw the 16-screws securing the Rear Banjo (18) and lift it off.

Withdraw the screws securing the Thermostat (230) and/or TOC (38) and pull the connecting wires through the Grommet (25).

Note: Operation of the TOC should only occur if the thermostat has failed. If the TOC should also fail this results in high temperatures in the dryer.

FAULT FINDING

In the event of an electrical fault carry out the preliminary electrical system checks i.e. earth continuity, polarity, and insulation resistance.

Use each chart to locate the fault causing the dryer to operate incorrectly as follows:

Chart No.

1 Motor does not run.

2 Motor runs but full sequence control does not produce ignition spark.

3 Motor runs, Full Sequence Control produces ignition sparks, but gas does not ignite.

4 Motor runs, gas ignites but burns for only a short period.

CAUTION

High tension lead is deliberately routed away from other wires to avoid electrical interference.

Chart 1. Motor does not run

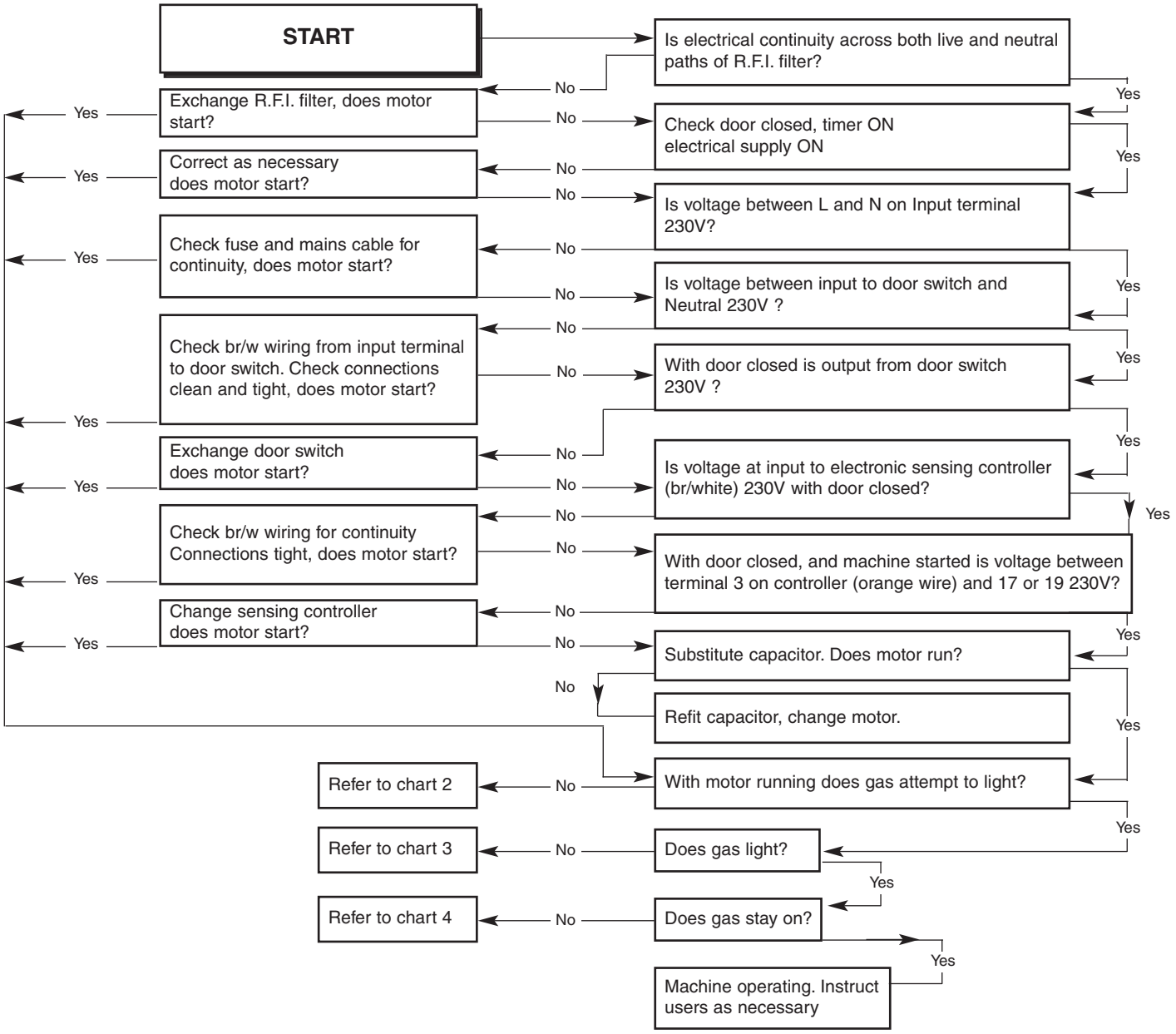


Chart 2.

Motor runs but full sequence control does not produce ignition spark

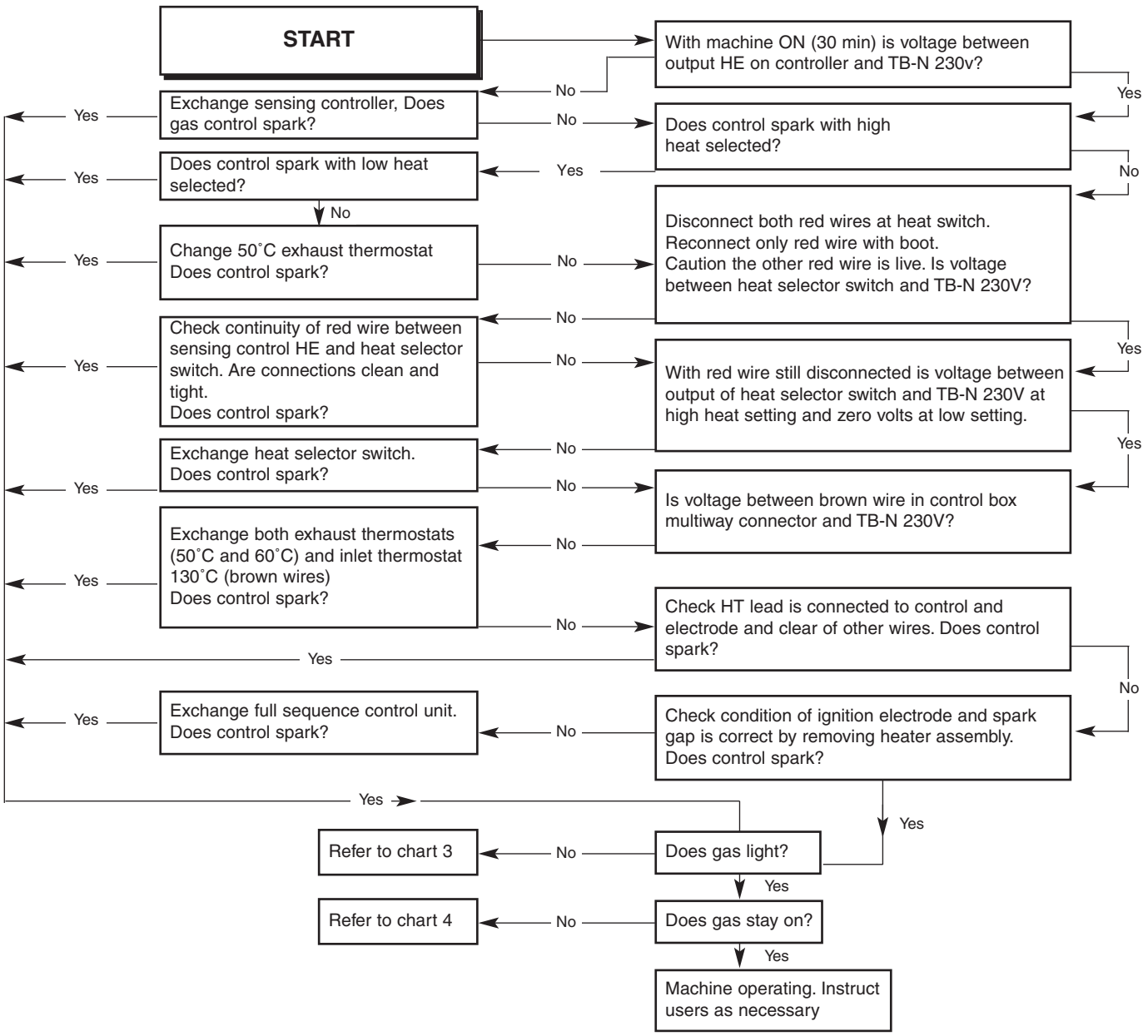

START
With machine ON (30 min) is voltage between output HE on controller and TB-N 230v?
No
Yes
Exchange sensing controller, Does gas control spark?
Yes
No
Does control spark with high heat selected?
Yes
No
Does control spark with low heat selected?
Yes
No
Disconnect both red wires at heat switch. Reconnect only red wire with boot. Caution the other red wire is live. Is voltage between heat selector switch and TB-N 230V?
Change 50˚C exhaust thermostat Does control spark?
Yes
No
No
Yes
Check continuity of red wire between sensing control HE and heat selector switch. Are connections clean and tight. Does control spark?
Yes
No
With red wire still disconnected is voltage between output of heat selector switch and TB-N 230V at high heat setting and zero volts at low setting.
Yes
Exchange heat selector switch. Does control spark?
Yes
No
No
Yes
Is voltage between brown wire in control box multiway connector and TB-N 230V?
Exchange both exhaust thermostats (50˚C and 60˚C) and inlet thermostat 130˚C (brown wires) Does control spark?
Yes
No
Check HT lead is connected to control and electrode and clear of other wires. Does control spark?
Yes
No
Exchange full sequence control unit. Does control spark?
Yes
No
Check condition of ignition electrode and spark gap is correct by removing heater assembly. Does control spark?
Yes
Yes
Refer to chart 3
No
Does gas light?
Yes
Refer to chart 4
No
Does gas stay on?
Yes
Machine operating. Instruct users as necessary

Chart 3. Motor runs Full Sequence Control produces ignition sparks, but gas does not ignite

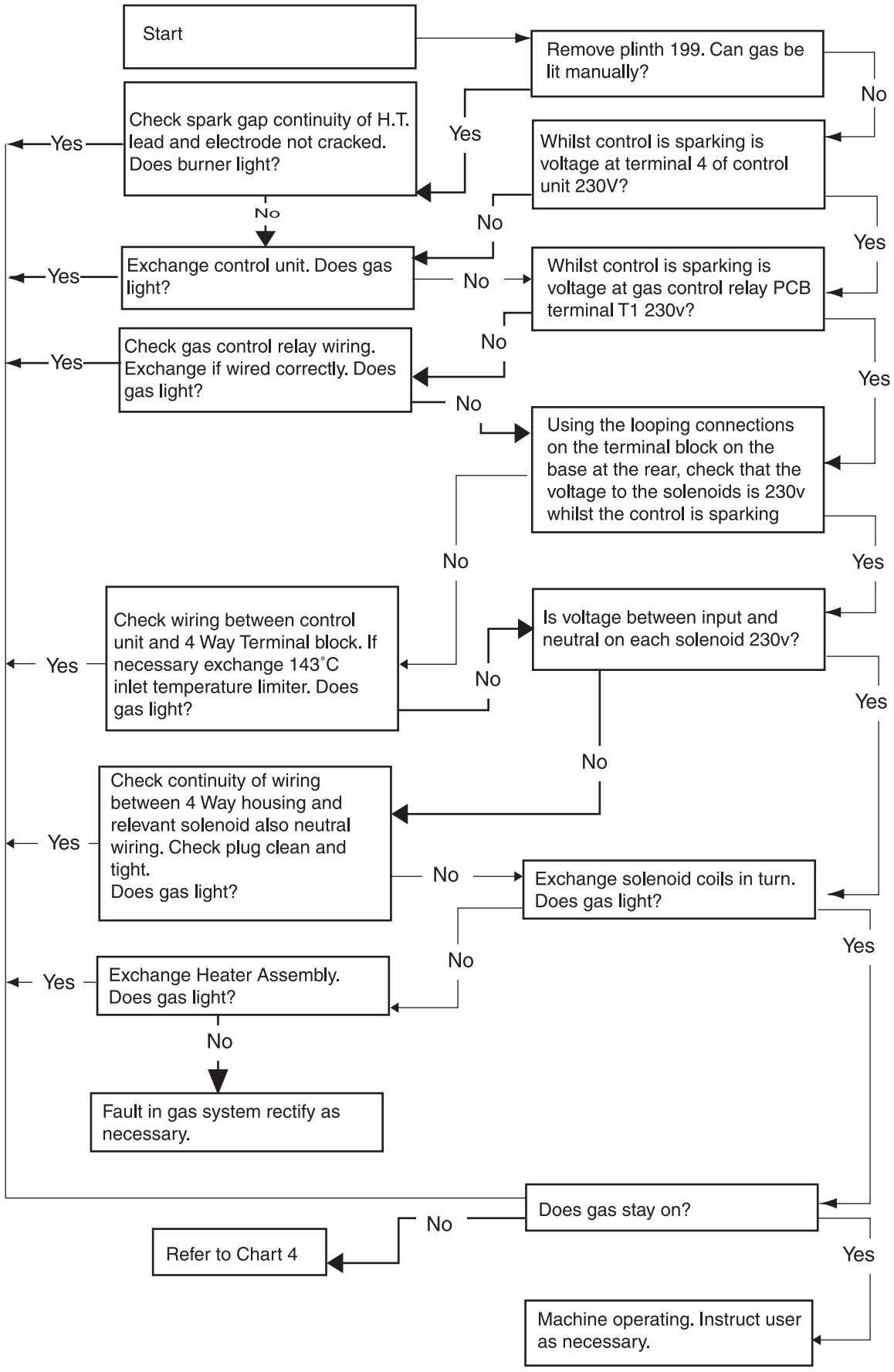
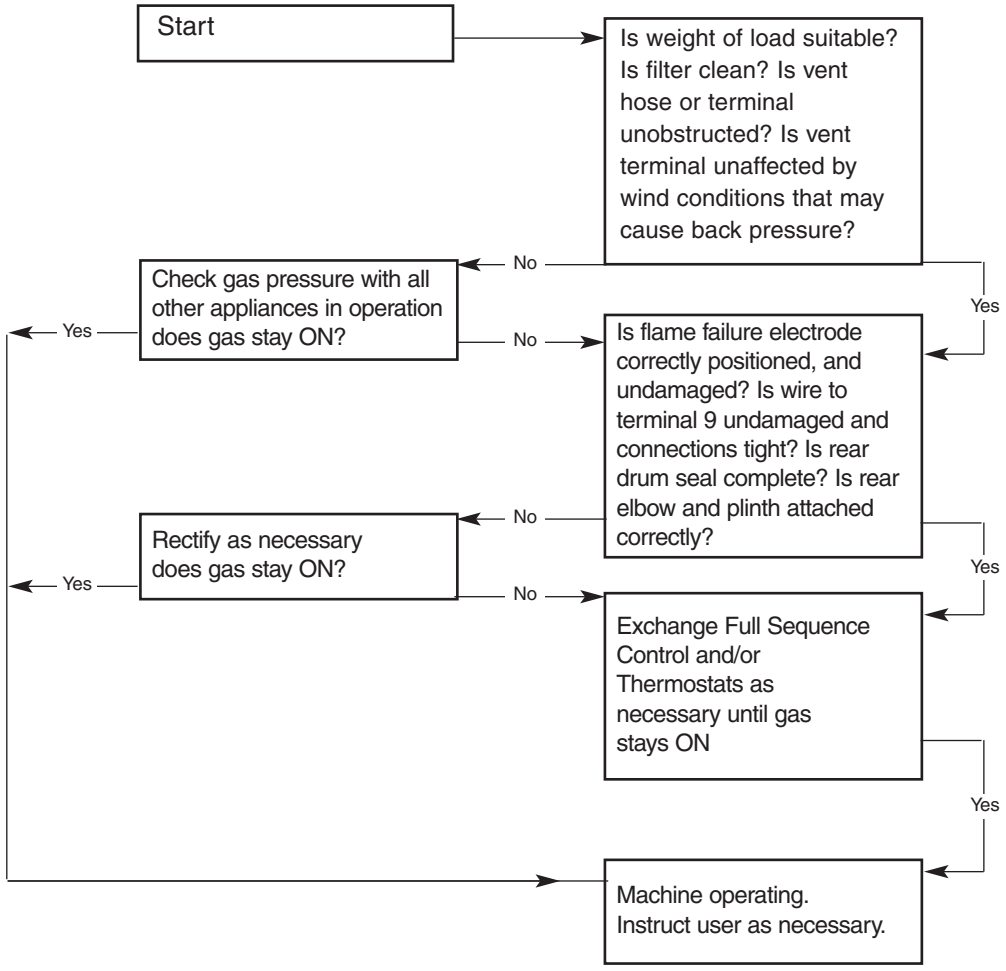
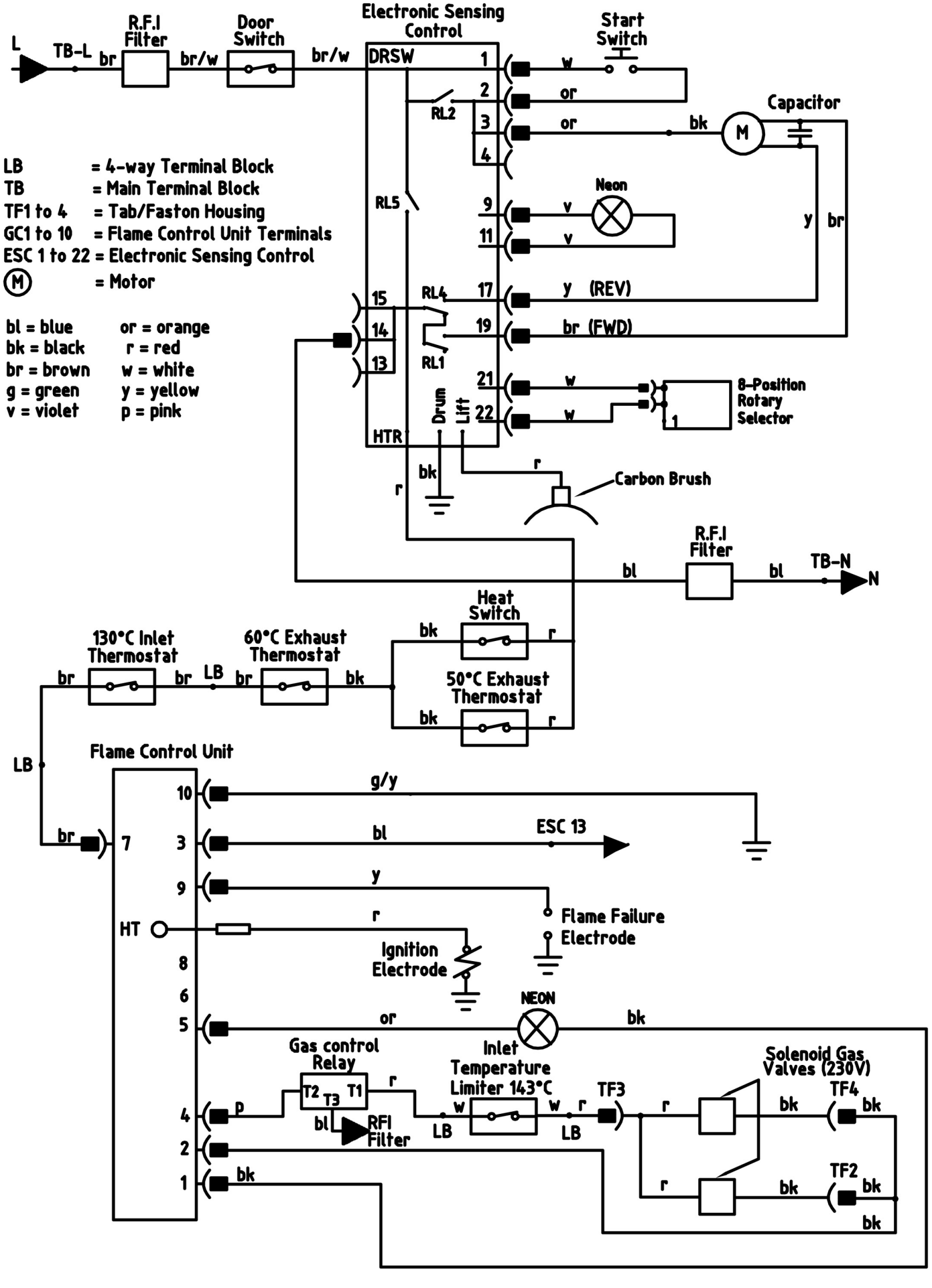

Start
Remove plinth 199. Can gas be lit manually?
No
Yes
Check spark gap continuity of H.T. lead and electrode not cracked. Does burner light?
Yes
No
Whilst control is sparking is voltage at terminal 4 of control unit 230V?
No
Yes
Exchange control unit. Does gas light?
Yes
No
Whilst control is sparking is voltage at gas control relay PCB terminal T1 230v?
No
Yes
Check gas control relay wiring. Exchange if wired correctly. Does gas light?
Yes
No
Using the looping connections on the terminal block on the base at the rear, check that the voltage to the solenoids is 230v whilst the control is sparking
No
Yes
Check wiring between control unit and 4 Way Terminal block. If necessary exchange 143˚C inlet temperature limiter. Does gas light?
Yes
No
Is voltage between input and neutral on each solenoid 230v?
Yes
No
Check continuity of wiring between 4 Way housing and relevant solenoid also neutral wiring. Check plug clean and tight.
Does gas light?
Yes
No
Exchange solenoid coils in turn. Does gas light?
Yes
No
Exchange Heater Assembly. Does gas light?
Yes
No
Fault in gas system rectify as necessary.
Does gas stay on?
No
Refer to Chart 4
Yes
Machine operating. Instruct user as necessary.

Chart 4. Motor runs, gas ignites but stays on for only short period

Before proceeding, **ensure** polarity of 13 Amp supply socket and earthing is correct.


Start
Is weight of load suitable? Is filter clean? Is vent hose or terminal unobstructed? Is vent terminal unaffected by wind conditions that may cause back pressure?
No
Yes
Check gas pressure with all other appliances in operation does gas stay ON?
Yes
No
Is flame failure electrode correctly positioned, and undamaged? Is wire to terminal 9 undamaged and connections tight? Is rear drum seal complete? Is rear elbow and plinth attached correctly?
No
Yes
Rectify as necessary does gas stay ON?
Yes
No
Exchange Full Sequence Control and/or Thermostats as necessary until gas stays ON
Yes
Machine operating. Instruct user as necessary.

FUNCTIONAL FLOW WIRING DIAGRAM - ECO 837 OR ECO 83A



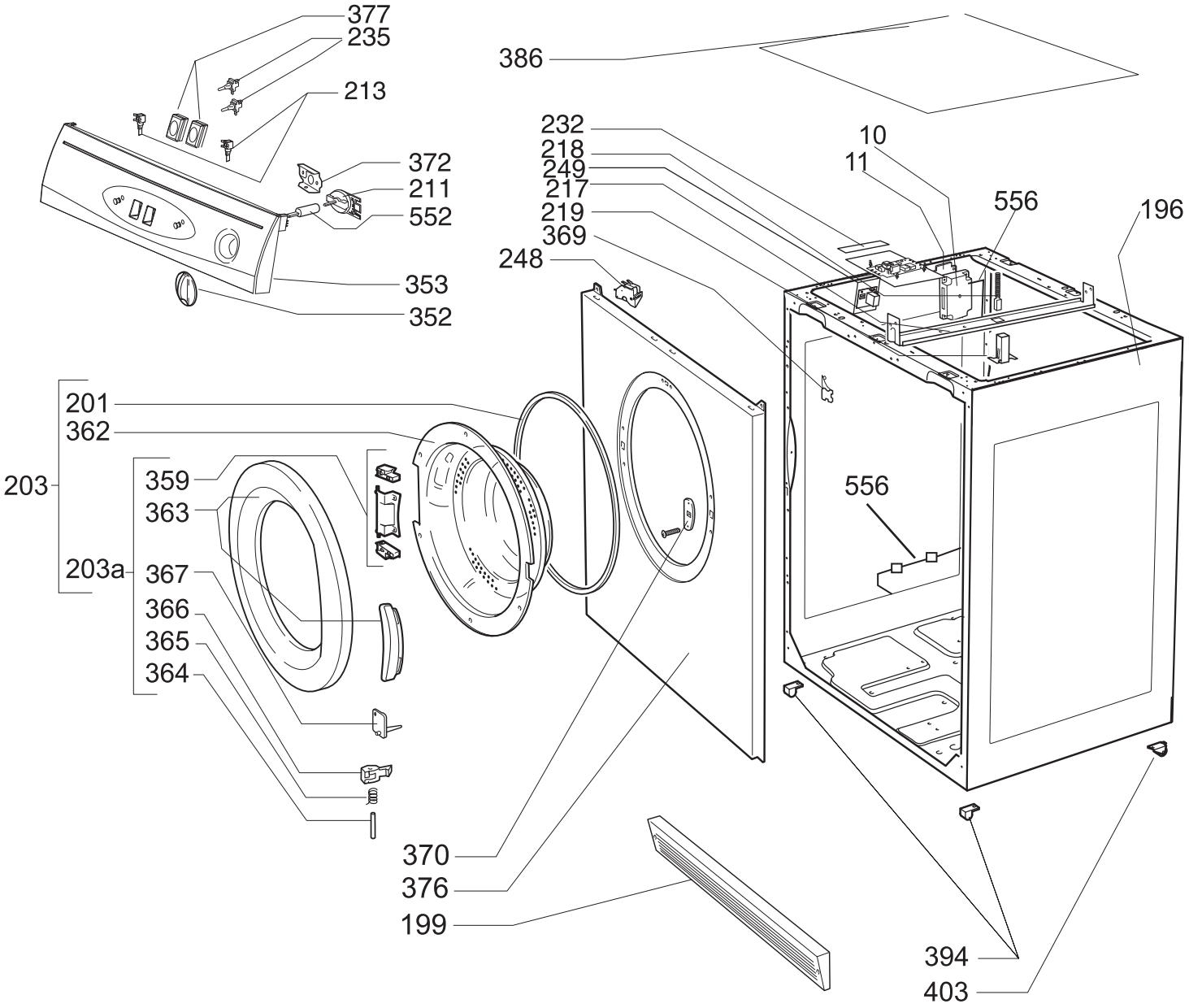
LB = 4-way Terminal Block
TB = Main Terminal Block
TF1 to 4 = Tab/Faston Housing
GC1 to 10 = Flame Control Unit Terminals
ESC 1 to 22 = Electronic Sensing Control
(M) = Motor

bl = blue
bk = black
br = brown
g = green
v = violet
or = orange
r = red
w = white
y = yellow
p = pink

ECO 837 OR ECO 83A

WHITE KNIGHT ECO 83A_
CROSSLEE P.L.C.

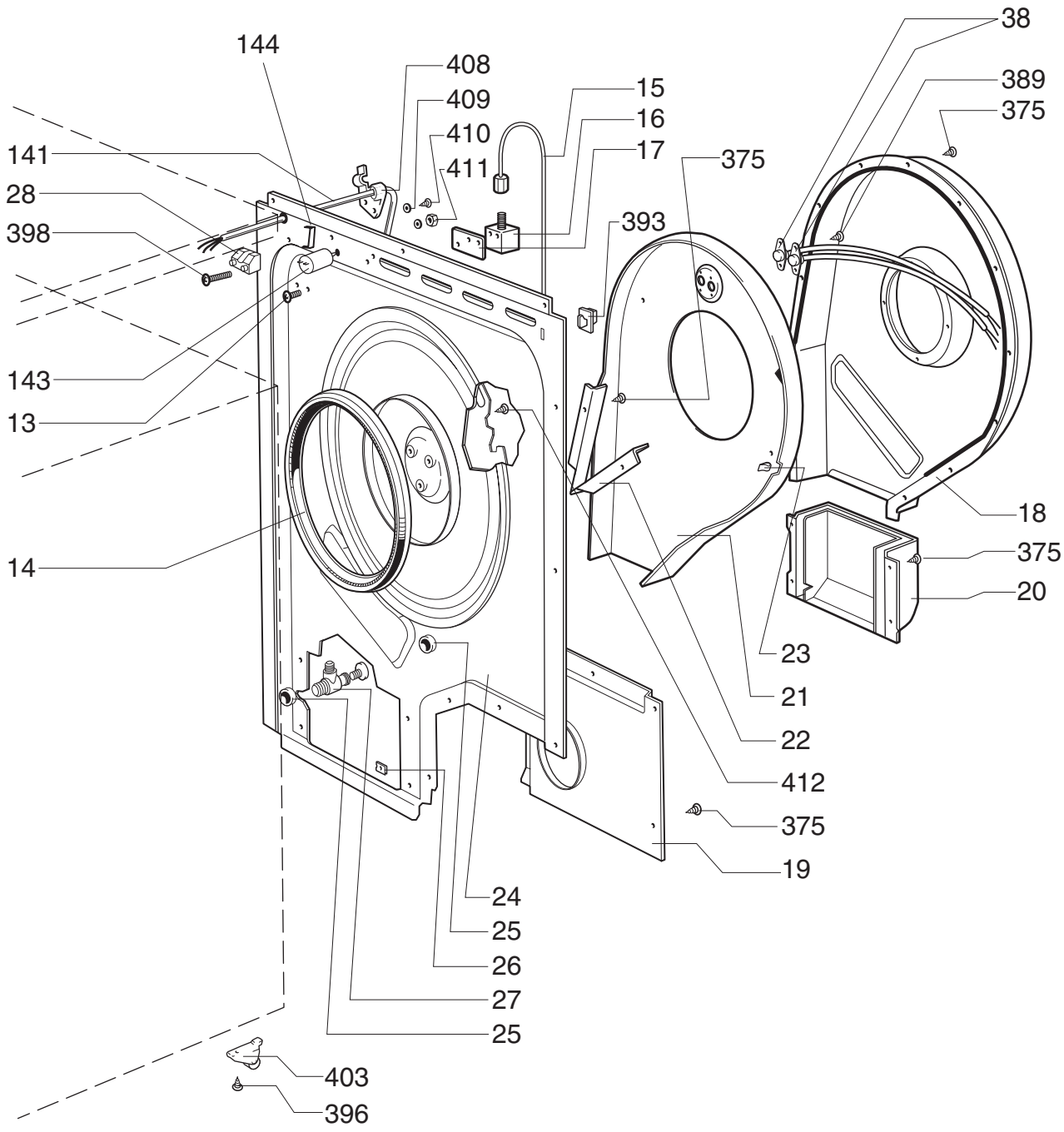
EXPLODED VIEW 1



WHITE KNIGHT ECO 83A_
CROSSLEE PLC

Exploded View 2

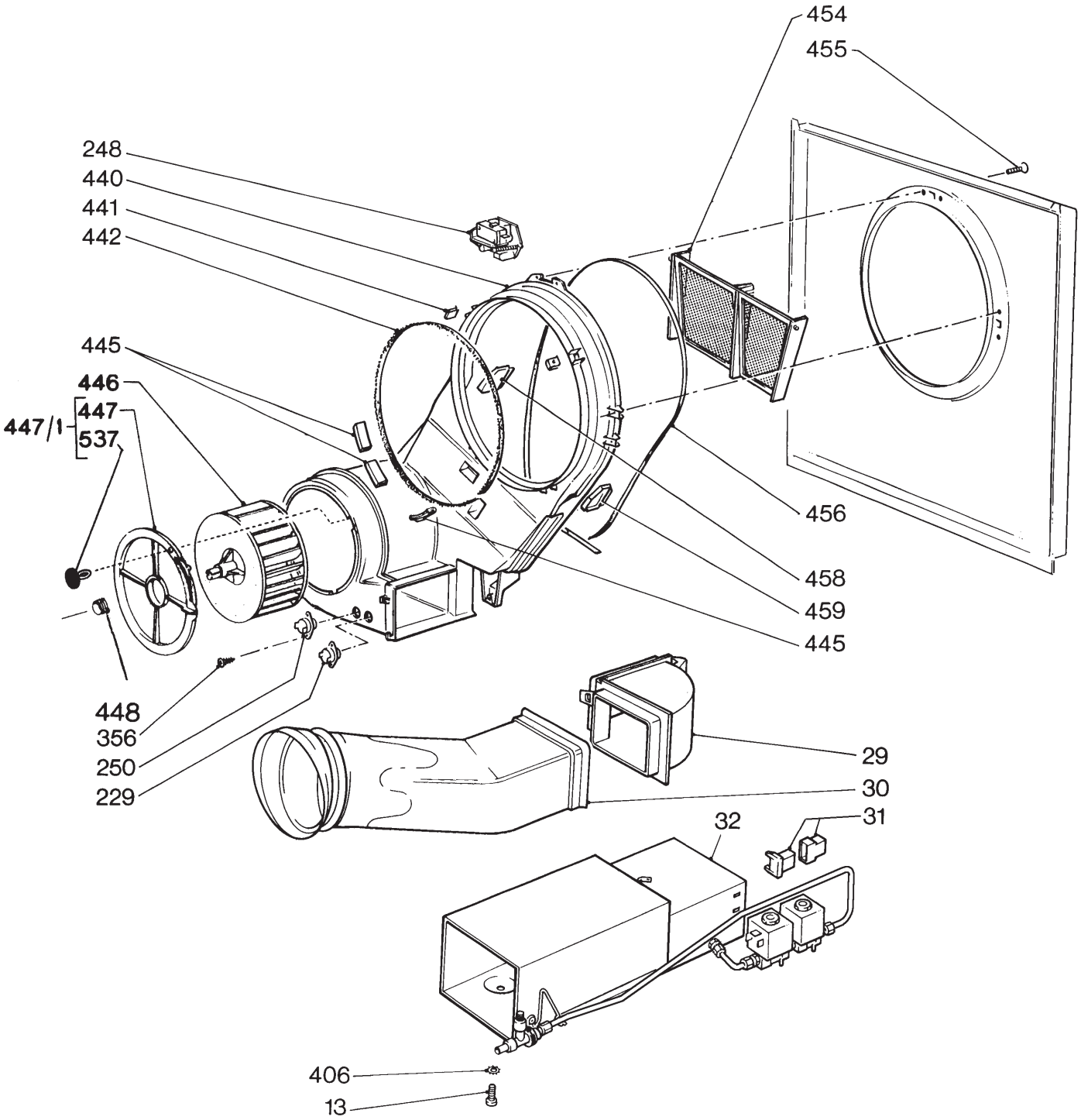
REAR ASSEMBLY VIEWED FROM FRONT



WHITE KNIGHT ECO 83A_
CROSSLEE P.L.C.

EXPLODED VIEW 3

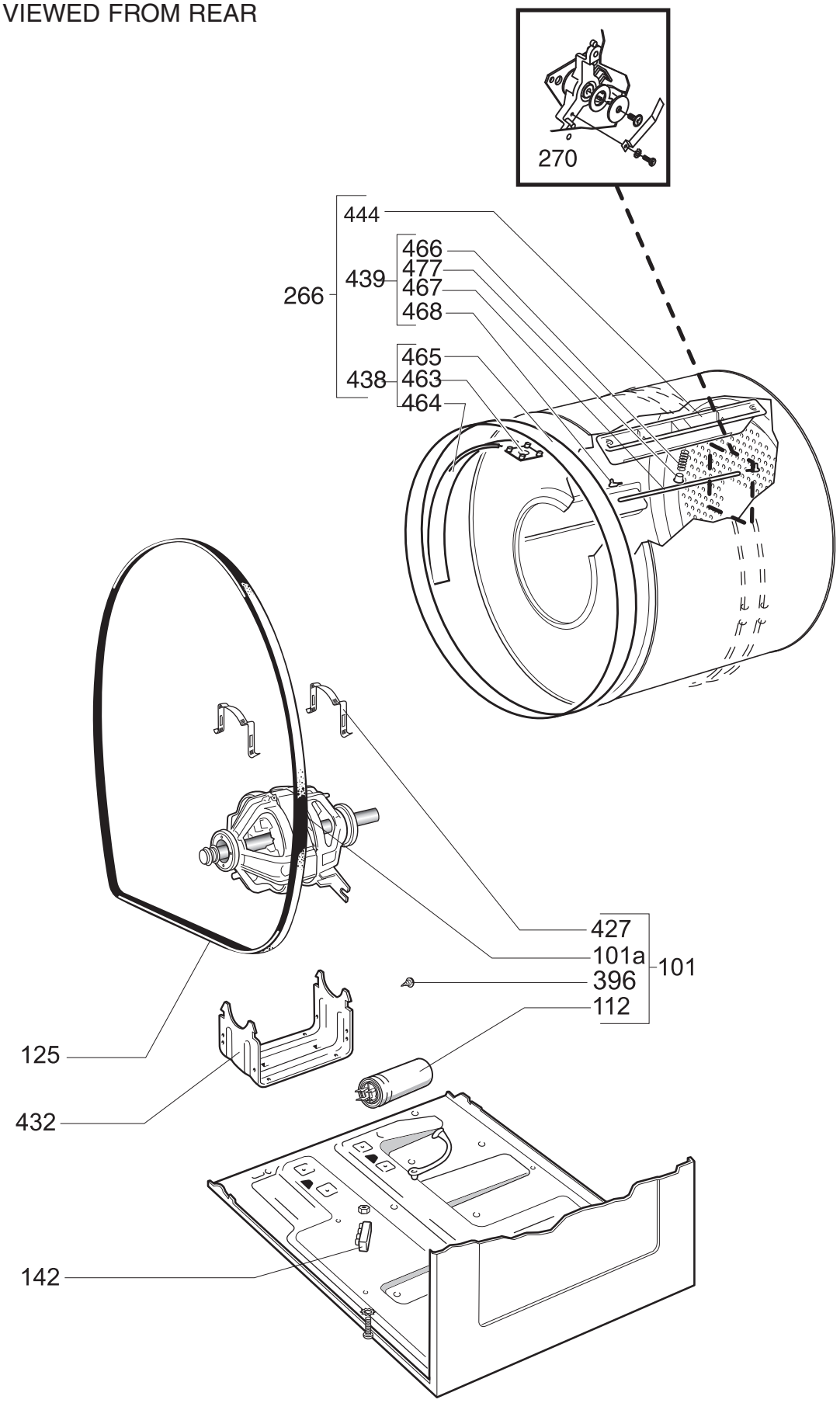
INTERNALS VIEWED FROM REAR



WHITE KNIGHT ECO 83A_
CROSSLEE P.L.C.

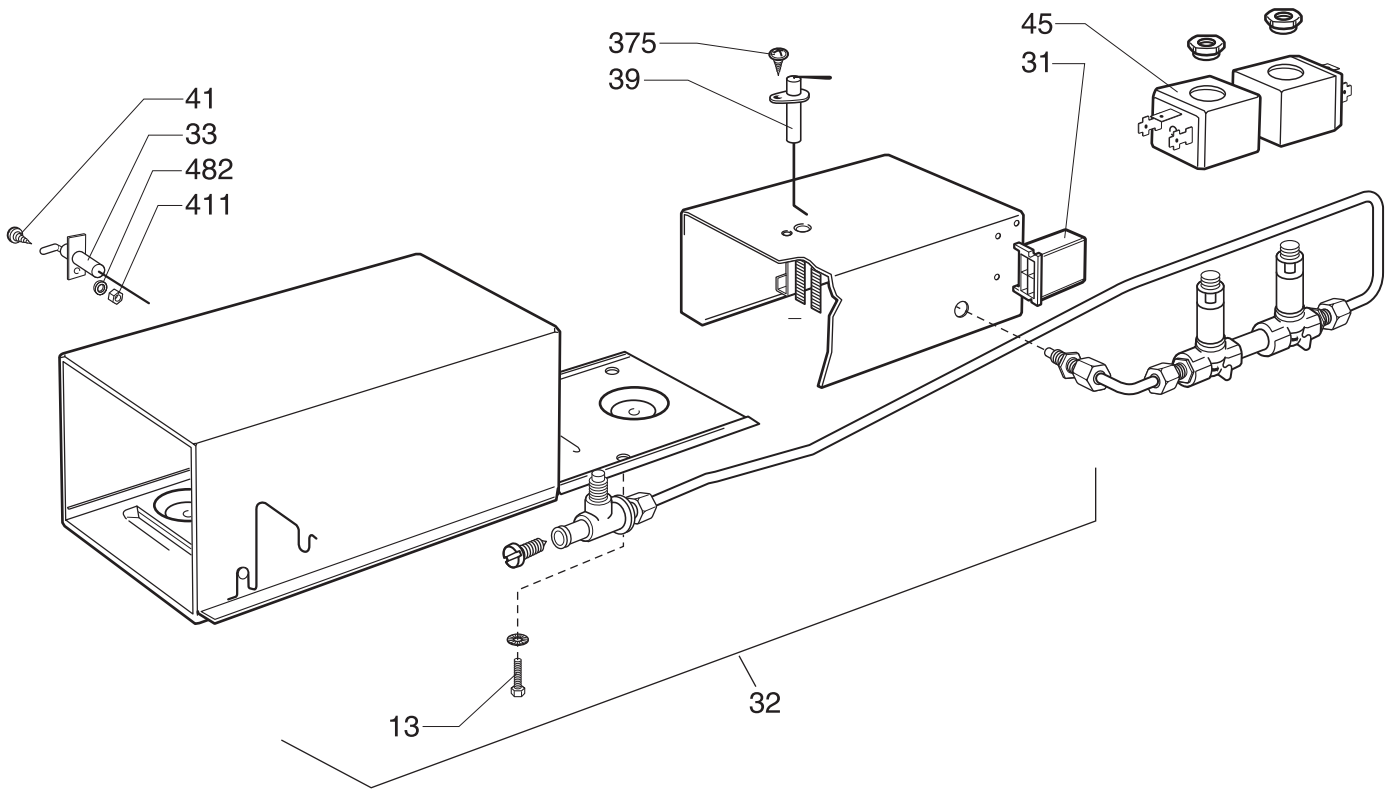
EXPLODED VIEW 4

INTERNALS VIEWED FROM REAR



WHITE KNIGHT ECO 83A_ CROSSLEE P.L.C. EXPLODED VIEW 5	

HEATER ASSEMBLY



BG83A_ (Eco 83A)
PARTS LIST

Item	Description	Part Number	Expl. View
10	Control Unit	4213 092 25451	1
11	Control Unit Bracket Assembly	4213 070 08623	1
13	Screw M4 x 10	8213 130 37161	2&5
14	Rear Seal Assembly	4213 092 08511	2
15	External Feed Pipe (Bundy Tube Assy 3)	4213 089 0788_	2
16	Gas Inlet Connector	4213 078 49504	2
17	Restrainer Plate	4213 070 08741	2
18	Rear Banjo	4213 080 08361	2
19	Cover Plate (access)	4213 070 08603	2
20	Hot Air Elbow Assembly	4213 089 0791_	2
21	Air Channel/Insulating Plate Assembly	4213 089 07901	2
22	Air Guide	4213 070 08551	2
23	Cable Clip	4213 078 26231	2
24	Back Panel Assembly	4213 089 07892	2
25	Grommet	4213 077 08092	2
26	Captive Nut No 8 'U' Type	8213 130 37711	2
27	Tee Piece/Test Nipple/Plug Assembly	4213 092 08461	2
28	Terminal Block - 2 Way	4213 078 44621	2
29	Exhaust Elbow Assembly	4213 092 08521	3
30	Exhaust Tube	4213 077 48013	3
31	4 Way Housing Assembly	4213 092 08431	3 & 5
32	Gas Burner Assembly	4213 092 08441	3 & 5
33	Flame Failure Electrode	4213 092 19801	5
38	Inlet Thermostat & Inlet Temperature Limiter	4213 092 33911	2
39	Ignition Electrode	4213 092 08491	5
41	M4 x 10 Pan Screw	2522 180 40002	5
45	Solenoid Coil (SCEM)	4213 092 08501	5
101	Motor and Capacitor Assembly	4213 092 25611	4
101a	Motor (Ceset/Olmo)	see 101	4
112	Capacitor 8µf	4213 092 08091	4
125	Drive Belt	4213 092 18601	4
141	Mains Cable	4213 076 35123	2
142	Terminal Block	4213 078 44613	4
143	Interference Filter	4213 078 52551	2
144	Earth Tab	4213 092 41181	2
196	Cabinet Assembly	4213 092 45591	1
199	Plinth Assembly	4213 092 45691	1
201	Door Seal	4213 077 08344	1
203	Complete Door Assembly	4213 092 45611	1
203a	Door Frame Assembly	4213 092 45621	1
211	Electronic Sensing Control	4213 078 54732	1
213	Neon Assembly	4213 078 50401	1
217	Brush Holder Support	4213 089 26731	1
218	Brush Assembly	4213 078 45023	1
219	Brush Holder	4213 077 39503	1
229	Exhaust Thermostat 60 Deg C	4213 078 53001	3
232	Programmed PCB	4213 078 57312	1
235	Electronic Start Assembly	4213 092 46881	1
248	Mechanical Switch -Ellipse 2 button SDO	4213 089 91651	4
249	Gas Control Relay	4213 092 51871	1
250	Exhaust Thermostat 50 Deg C	4213 078 49453	3
266	Drum Assembly	4213 092 44071	4
270	Drum Shaft/Bearing Kit	4213 092 05591	4
352	Timer Knob Assembly	4213 092 45741	1

353	Control Panel Assembly	4213 092 51881	1
354	Locator Peg	4213 077 61281	1
356	6G*3/8 DP/PWABE/NIBS/TSZPC	8213 130 38051	3
359	Hinge Assembly	4213 092 26071	1
362	Window	4213 077 4409_	1
363	Door Frame	4213 077 92271	1
364	Latch Pivot	4213 075 13013	1
365	Latch Spring	4213 075 70833	1
366	Door Latch	4213 077 53413	1
367	Switch Strike	4213 077 83571	1
369	Loom Clip	4213 075 70941	1
370	Latch Guide	4213 077 40992	1
372	Timer Bracket	4213 070 10932	1
374	Pan Screw St M3 x 5	2522 180 40001	1
375	6 x 3/8 Earth Screw MZP	8213 130 38051	1, 2 & 5
376	Front Panel Assembly	4213 092 45681	1
377	Ellipse Left & Right Hand Button Assembly	4213 092 45781	1
386	Table Top Assembly - Ellipse	4213 092 46211	1
387	Cable Tie	4213 077 41772	1
389	Screw 6AB x 6.5	2522 165 20003	2
393	Flex Support Clip	4213 077 40982	2
394	Foot	4213 077 39833	1
396	Flb Ear Scr St Zn 8 x 3/8	8213 130 38051	1, 2 & 3
398	Screw M4 x 25	2522 180 40003	2 & 4
403	Roller Assembly	4213 092 35651	2
406	M5 Toothed Lockwasher	2513 611 01008	3
407	Hex Nut DC St Zn M5	2522 401 55012	1 & 2
408	Cable Clamp 2	4213 077 47303	2
409	Washer M5 Form A	2522 604 60002	3
409	M5 Form A Washer	2522 600 65029	3
410	Screw No6 X1/4	2522 165 20004	2
411	M4 Hex Nut	2522 402 50001	2, 3 & 5
412	Screw No 10-24 UNC x 3/8”	8213 130 31051	2
427	Motor Retaining Clips	4213 078 4536_	4
432	Motor Mounting Bracket	4213 080 0675A	4
438	Slip Ring Assembly	4213 092 05731	4
439	Sensing Strip Assembly	4213 092 05691	4
440	Banjo Assembly	4213 089 11992	3
441	Front Bearing (short)	4213 077 40952	3
442	Front Seal	4213 077 4094_	3
444	Lifter	4213 077 41248	4
445	Front Bearing (long)	4213 077 40962	3
446	Fan	4213 077 4089_	4
447	Access Cover (fan)	n/a	4
447/1	Access Cover Assembly	4213 092 18081	3
448	Fan Spring Clip	4213 075 71162	3
451	Fln Tap Scr St Zn 8 x 1/2	2513 153 01003	1
454	Filter	4213 092 17821	3
455	Screw 6 x 12	2522 166 30001	3
456	Banjo Seal	4213 077 07992	3
458	Banjo Insert No 2	4213 077 53502	3
459	Banjo Insert No 1	4213 077 53492	3
463	Location Grommet	4213 077 07711	4
464	Slip Ring Insulator	4213 077 41253	4
465	Slip Ring	4213 075 13141	4
466	Ring Spring	4213 075 70931	4

467	Sensing Strip	4213 075 13152	4
468	Sensing Strip Clip	4213 077 41176	4
477	Ring Spring Plug	4213 074 81353	4
482	M4 Toothed Lockwasher	2522 616 15007	5
537	W' Button (access cover)	4213 078 26311	3
552	Knob Extension	4213 077 59953	1
555	Rear Panels Seal Kit	4213 092 28001	2
556	HT Lead	4213 176 00771	1
	Bearing Pads & Brush Seal Kit	4213 092 21171	

PARTS FOR ECO GREEN COLOUR VARIANT

196	Cabinet Assy - ECO GREEN	4213 092 54631	1
376	Front Panel Assembly - ECO GREEN	4213 092 54641	1

Manufactured By: Crosslee plc, Halifax Road, Hipperholme, Halifax, HX3 8DE 4213 094 79382